



Run business, run. Backup to disk with HP Data Protector software

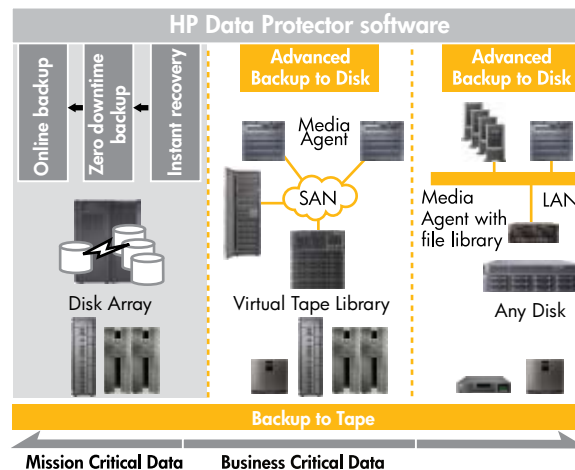
Businesses run on information, and in today's business, all information is critical. The issue with today's technology is that as the volume of data increases, the amount of time required to perform a backup and restore is reaching unacceptable lengths. This is increasingly untenable as multi-national organisations are expected by their partners and customers to operate around the clock, every day of the year.

By combining tape-based and disk-based backup in a multi-layered approach, you can start moving towards a backup and restore solution that is aligned with the needs of your business. As more capacity is needed, disk storage can be added instead of tape. Backup to disk allows data to be copied at the optimum level of performance, eliminating any amount of downtime, and also allows you to restore data instantly to any point in time, eliminating data loss. Backup to disk also allows data residing at remote or branch offices to be protected by copying remote data to a central site.

HP Data Protector Advanced Backup to Disk allows backup to a file library or virtual tape library (VTL). Advanced Backup to Disk meets the demand for fast and direct restore from disk with the ideal solution for customers who want to stage the backup on fast central disk space before optionally moving it to tape. The advantages to backing up to disk are:

- **Reduced recovery time:** When you backup to disk, you can restore data instantly, unlike a tape drive that has to be mounted, loaded, and searched.
- **Improved backup performance:** Backing up to disk allows data to be copied at the optimum level of performance – whether you are performing a full backup or smaller incremental backups.
- **Storage capacity reduction:** Data reduction technology (Virtual and Synthetic Full) helps eliminate the need to backup the same data multiple times therefore reducing the disk and tape capacity
- **Branch office backup consolidation:** Backup to disk allows you to copy the data at distributed branch offices to a central site for consolidated backup.

Figure 1:
Backup to Disk Technologies



File library

HP Data Protector Advanced Backup to Disk offers a disk-staging solution, using disk as a cache prior to a backup to tape. The concept of disk staging is based on backing up data in several stages to improve the performance of backups and restores, reduce costs of storing the backed up data, and increase the data availability and accessibility for restore. The backup stages consist of backing up data to media of one type and later moving it to media of a different type. The data is backed up to media with high performance and accessibility, but limited capacity (for example, system disks). These backups are usually kept accessible for restore for a period of time when a restore is the most probable. After a certain period of time, the data is moved to media with lower performance and accessibility, but high capacity for storage, using the object copy functionality.

The file library device is the basis for staging the backup on disk (with the option to copy it or move it to tape later). The file library consists of configured directories that include files in which the data is stored. The backup data is written onto the files on disk in HP Data Protector tape format. The key focus for file device libraries are more affordable disk arrays, especially the current SATA-based HP disk arrays, which are positioned mainly as backup devices. In case the file library is running out of free space, new backup capacity can be assigned automatically. The file library is configured by defining mount points where HP Data Protector will create its 'media' and optionally, the number of simultaneous 'writers' that will be used. Then, HP Data Protector can utilise this just like any other physical backup device and will auto create the media files on the fly as required.

'Object Copy' provides the capability to copy from one type of media to another. This means that customers can perform a backup to the file library, and then (immediately after the backup or at a scheduled time) copy the file-based media to a physical media such as LTO automatically. So this becomes a method to perform disk staging of slower backups (for example, over a slow LAN), followed by high-speed backup to a physical device.

Virtual tape library (VTL)

Virtual tape consists of dedicated hardware that emulates tape and tape libraries, but uses disk for data storage. It is connected to a SAN and appears to the hosts on the SAN as a defined set of tape drives and media. However, when running a backup to a virtual tape, the backup data is actually stored on disk, and can then be copied out to physical tape at a later stage.

Data Protector Advanced Backup to Disk takes full advantage of de-duplication capabilities for virtual tape libraries. When using this feature, companies can store up to fifty times as much data in a given disk space. Refer to our constantly updated listed of supported vendors and devices at www.hp.com/go/dataprotector, and click 'Support Matrices.'

Advanced integration capabilities are available as well, if you use HP storage. Data Protector achieves unique integration with HP Virtual Library System (VLS) using a SmartCopy feature to provide automated and transparent movement of data between the VLS and physical tape libraries. By offloading the copy operations to the VLS, traffic on the SAN is reduced, and space can be freed up on the VLS for additional disk backups. This process is completely managed and controlled through Data Protector.

“At Continental we believe in the future of HP’s Data Protector software and its ability to help manage our business. Features, specifically backup to disk, will lower scalability costs, increase performance and allow us to meet our data compliance objectives.”

Devin York, Director of Financial Systems,
Continental Airlines

In addition, this is cost efficient since no drive or library licensing is required for the physical tape libraries that are connected to a VLS through Smart Copy. These libraries are considered an ‘extension’ of the VLS storage from a licensing perspective.

Synthetic full backup/virtual full backup

Data volumes are increasing, but at the same time, IT managers have still shorter backup windows to work with. Increasingly, there is an organisational expectation that data should be instantly accessible. Current technologies require many full backups, because it is very time consuming to restore a long chain of incremental backups. Full backups require a lot of space on the backup side and they are very disruptive for the operation. Often full backups continue for many hours and put significant performance degradation on the IT resources. It is these issues that are addressed by synthetic backup.

Simply put, synthetic backup puts a stop to the build up of incremental backups, thus eliminating the need to run lengthy full backups. This technology works by merging all incremental backups into a full ‘synthetic’ backup – a process that can be repeated indefinitely, with no need to run a full backup again. Also, since the restore chain consists of only one element, the time required to recall data and load on the network is dramatically reduced.

Synthetic full backup benefits – a summary:

- The need for full backups is eliminated. After the initial full backup, only incremental backups are performed, which significantly reduces the time needed for the backup.
- Consolidation of backed up objects is performed on the Media Agent, putting no stress on either the production servers or the network.
- A full restore from a Synthetic Full Backup is as fast as from a conventional full backup, as there is no need to retrieve data from incremental backups. This eliminates the reading of each incremental backup in the restore chain, and if tape devices are used, also loading and unloading of several media and seeking for object versions.

If all the backups, full and incremental, are written to the same file library which uses a distributed file media format, a still more efficient type of synthetic backup is possible. This is called Virtual Full Backup. The solution uses pointers to consolidate data instead of copying the data. As a result, the consolidation takes less time and avoids unnecessary duplication of data.

Warranty

HP warrants only that the software media will be free of physical defects for a period of ninety (90) days from delivery. For more information about HP Global Limited Warranty and Technical Support, visit:

www.hp.com/products/storageworks/warranty

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For more information on HP Data Protector software

Interactive digital hub site:

<http://www.hp.com/go/imhub/dataprotector>

General web page:

<http://www.hp.com/go/dataprotector> (Note: The latest HP Data Protector software support matrices can be found by clicking 'Support Matrices' from this page)

Direct link to Quickspecs with detailed product specifications, ordering information and more:

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4AA2-3694EEW, January 2009

